

NOVEL LOCOMOTIVE POWER.—A very ingenious application of the screw principle to the common locomotive has been suggested by an American. It professes to overcome inclined planes of any steepness, even though the greatest load be attached, with perfect ease and certainty. By a very simple apparatus the driving-wheels are lifted from the track on approaching the plane. A cogged-wheel of small diameter is attached to, and derives motion from, the axle. This wheel plays into another cogged-wheel of greater diameter, and that in its turn gives motion to an everlasting screw placed longitudinally beneath the engine. Along the centre of the track, on the inclined plane, a series of strong wheels, moving freely on their pivots, and inclined to the horizon at the same angle with the plane, are so placed that they correspond with the threads of the everlasting screw beneath the engine. When the engine reaches the plane, motion is given to the screw from the engine itself, and its power is capable of being increased to any point by increasing the ratio of the diameter of the cogged-wheels, turning the screw to the diameter of the wheel deriving motion from the driving axle of the engine. The inventor anticipates very great advantages from this adaptation; among others, a great saving in expense, additional safety to passengers, and facilities of constructing lines in positions hitherto considered wholly unadapted for such purposes.

IMPROVED MANUFACTURE OF CAST STEEL.—The solution of the problem of producing cast-steel direct from cast-iron, without incurring the enormous expense hitherto inseparable from the old process, has engaged the attention of scientific men, since the time of Bessemer, whose work appeared nearly a century ago, to the present time, without having produced any result of the least value. At length, however, this object is announced as having been accomplished by a gentleman, who states the apparent paradox, that he is able to produce cast-steel at a cost not exceeding that of pig-iron, of a quality suitable for the manufacture of steel. Of the importance of such a discovery, supposing it brought into practical operation, some opinion may be formed, from considering that steel made in this manner may be sold at half the present selling price of that of medium quality, made in the usual way, at a profit of 100 per cent.; and that the quality of it, according to the statement of the discoverer of the process, will be equal to that now made from the most expensive foreign iron; it is also stated that the steel is suitable for every purpose for which steel is now used—from coach-springs to surgical instruments—and that, consequently, this process must entirely supersede all those at present in use for making the various descriptions of steel now used in the arts.

RAILWAY RESTAURANT.—A plan has been promulgated which promises to administer largely to the luxury and comfort of those who are compelled to undertake long journeys by railway. It consists in the construction of some newly-formed carriages, so as to constitute a sort of travelling café, or railway restaurant, to be placed in the rear of the other carriages, which are to be so constructed as to open into one another, thereby enabling a waiter to travel along the train *ad libitum*. A bill of fare, shewing what the refectory contains, is to be posted in each carriage. Bells are to be at the command of the passengers to announce their wants to the waiter, who will travel to them along a narrow passage alongside the interior of the carriages constructed for the purpose.

RESTORATION OF ST. MARY'S CHURCH, BURY ST. EDMUNDS.—A detailed account of the receipts and payments connected with this restoration has just been published. It appears that the receipts up to the present time amount to 2,056l. 4s. 7d., and the payments to 3,417l. 6s. 8d., shewing a deficiency of 1,361l. 2s. 1d. A public appeal for further donations has been made by the minister and churchwardens, who, for the present, have paid the deficiency. It may be mentioned, in connection with this restoration, that in addition to the very handsome subscriptions of Henry James Porteus Oakes, Esq., and John Fitzgerald, Esq., the former gentleman presented a stained window at the east end of the nave, and the latter, a new font.

PROGRESS OF RAILWAYS.—Railways are messengers of civilization, peaceful locks tending to bind countries in ties of closer intercourse; as a guarantee of peace they protect from war. They are now covering the Continent—extending across the Desert—about to span India from Calcutta to Bombay. Where will they stop? There is a railway now on its way from St. Petersburg towards Moscow—will it stop there? The direction of that line, if prolonged, leads to China. Between St. Petersburg and Peking, there is scarcely a hill; Moscow is, therefore, but a first-class station on the way to Peking. We will not speculate on the date of completion of such a line yet, but return to what is imminent and in sight. From London to Southampton there is now an electric telegraph. Mr. Wheatstone is on his way to Paris for the arrangement of a telegraph in France. It may soon be completed from Havre to Paris; from Paris to Marseilles there will be a continuous line of railway, and a telegraph on it; thus we reach the Mediterranean; thence Egypt, across the Desert, and so to Bombay and Calcutta. We may cross to Belgium, where an electric telegraph already exists. We shall soon have our continuous line to Venice; and then across the Desert, and finally from Calcutta to Bombay as before. Does such a prospect, so clear, so certain of bringing so near home our many friends and brothers now in the other hemisphere, not bring home to our hearts the conviction that we are just entering a career of social improvement, based on scientific discovery, the beneficial effects of which it is difficult to foretell, but impossible to over-estimate?—*Athenæum*.

A COURT IN THE GREAT METROPOLIS.—Orchard-place is a broad court leading out of Orchard-street, Oxford-street, and close to Portman-square, Manchester-square, Grosvenor-square, and some of the first streets in the metropolis. Including two nooks, Orchard-place is less than 45 yards long and 8 broad, and contains twenty-seven houses. Its inhabitants amount to 552 persons, of whom 552 are about fourteen years of age! The population of a large village or small town is here compressed into one court. Amongst these are found 222 adults who could not read; whilst most of the other adults could only read imperfectly. Only seventeen persons had copies of the Scriptures. Ten persons professed to attend Protestant worship; while the great mass of those who attend Roman worship only did so early on the morning of the Lord's-day. The parties employed in taking the statistics of the place witnessed two fights, and one woman was nearly beaten to death. The court was once supplied with copies of the Scriptures, but such was the desperate character of the inhabitants, that every copy was destroyed. Such is a brief outline of one of the heathen spots which stud the metropolis of Christian England.

ON FIXING BLOWING SANDS.—I have had occasion to try experiments upon the practicability of fixing blowing sands on the sea coast, by planting grasses and trees upon them. The experiments were made upon a tract of blowing sand of between 500 and 600 acres, on the sea coast, upon my property in the county of Sligo, in Ireland, and with great success; and if you should wish for any detailed information on the subject, you would obtain it by addressing my local managing agent, Mr. Lyoch, Rundale Cottage, Chifney, Sligo. I found a small quantity of bent growing upon the sands; and by transplanting annually, for many years past, a sufficient quantity of the younger plants, I have covered with a close coating of bent the whole surface of the formerly blowing, but now fixed and stationary sand; and the result is, that the bent affords shelter and food for young cattle, while trefoil begins to grow spontaneously on the sand between the tussocks of the bent. I have for the last three or four years sown seeds of the pinus maritima, from Bordeaux, among the bent on some portion of the sand, and the young plants are growing well, though hitherto they have been more occupied in striking their roots deep into the sand than in throwing shoots upwards. I have also tried young oaks in the sand, and they seem as yet to thrive in it even better than the pine. The sand is the broken down rock of the old or lower sand-stone formation.—*PALMERSTON, Carlton-terrace, Feb. 17.* [This mode is adapted to a considerable extent in Hulland, where the soundness of the dykes is a matter of vital importance.—*Ed.*]

NAILED IN 1281.—The following entry from a Roll, dated the ninth year of Edward I. (quoted by the Rev. Charles Hartshorne in the *Archæological Journal* for January), furnishes the price and names of the different sorts of nails that were then used. "For ten thousand of lath nails (*lathe nays*), bought at Nottingham, 7s. 10s., namely, 8jd. a thousand. For two thousand and a half of board nails (*board nays*), bought at the same place, 1l. 17s. 6d., namely, 1s. 6d. a hundred. For a thousand and great spike nails (*magnus spikings*), bought at the same place, 3s. 4d., namely, at 2jd. a hundred (*sic*). For two hundred and a half of *best nays*, bought at the same place, 2s. 3d., namely, at 6d. a hundred (*sic*). For four hundred of clout nails (*clout nays*), bought at the same place, for the fastenings and bars (*ad cyntes et barres*), 4d.; namely, a hundred for a penny."

TENDERS.

TENDERS delivered for erecting Gothic Cottage at Finchley.—P. E. Fowler, Esq., Architect, Sackville-street, Piccadilly.

Chapple and White	£1,840
Cooper	1,683
Plaskett and Skelton	1,672
Stevenson	1,633
Barton and Son	1,568
Gerry	1,509
Elston and Co.	1,392
Simmonds	1,390

NOTICES OF CONTRACTS.

We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 3, York-street, Covent-garden.

For cutting, forming, and completing a new line of Private Carriage-road, one mile in length, from Whitehaven Castle, Cumberland, the seat of the Earl of Lonsdale, to the Turnpike-road, between Brantley toll-bar and Lonsdale-place, near the town of Whitehaven. April 7.

For constructing the fourth division of the Great Southern and Western Railway. April 8.

For supplying the Gaol, now in the course of erection at Aylesbury, Bucks, with gas-pipes, fittings, shades, and burners; locks, and other fittings; iron tanks, pumps, and piping necessary for the supply of water. April 8.

For about 250,000 Railway Sleepers not less than 9 feet long, for the Chester and Holyhead Railway. April 9.

For erecting at Alresford, Hants, between five and six thousand feet superficial of new Brickwork, to be either neat flat, joint-pointed with white mortar, or neatly tuck-pointed. The parties to find labour and the erection of scaffolding only. April 10.

For the restoration of the Parish Church of Grays Thurrock, Essex. April 12.

For the erection of a Church in the parish of St. Thomas, Winchester. April 12.

For the erection and building of a Farm-house, Barn, Stable, and other offices, at Hephworth, Suffolk. April 16.

For keeping Battle-bridge and Holloway-road in repair for one or more years. April 17.

For submitting a plan of a Tread-wheel, and constructing the same in the Common Gaol of Great Yarmouth, Norfolk. April 24.

For all the Works to be done in the erection and completion of the new cast-iron Bridge over the Haven of Great Yarmouth, including the finding of labour, certain materials, &c. April 26.

For the construction of the third and fourth divisions of the Chester and Holyhead Railway. April 28.

For laying out the Grounds of the Victoria-park Cemetery, and for draining the same, making the roads, paths, and finding all necessary trees, shrubs, materials, &c.

For performing the several works in building a new Workhouse at Tenterden. May 2.

For the formation and completion of a new Drain, being about eleven miles long, twenty yards wide, and five yards deep, for the Middle Level Drainage Commissioners. Also for the erection of a Stanchion, several Bridges of wood with brick abutments, together with the necessary culverts, and other works. May 8.

COMPETITIONS.

Plans, sections, and elevations for a Terminus, and other requisite accompanying offices, for the Great Southern and Western Railway, Ireland.

Plans for a Church to be erected within the Borough of Kingston-upon-Hull. May 8.